IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	10/693,584	Confirmation No.: 1077
Applicant(s)	:	Baiyi ZHAO et al.	
Filed	:	October 24, 2003	
TC/A.U.	:	1793	
Title	:	*Late Transition Metal Catalysts for Olefin Oligomerizations*	
Examiner	:	James E. McDONOUGH	
Docket No.	:	2002B130/2	
Customer No.	:	23455	
Date	:	May 18, 2010	

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Response to Second Notice of Non-Compliant Appeal Brief Under 37 C.F.R. § 41.37

This response is filed within one month of a second notice of non-compliant Appeal brief dated April 30, 2010. The Notice stated that the brief does not contain a concise explanation of the subject matter defined in each independent claim involved. Specifically claims 2 and 16 should be independently addressed.

Applicant herewith submits a new section "**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**" listing the appealed claims. Applicant respectfully requests that the attached section V be accepted and inserted into the Appeal Brief.

Please charge any deficiency in fees or credit any overpayments during the entire pendency of this case to Deposit Account No. 05-1712. Please also charge any petition fees, including fees for extensions of time necessary for the pendency of this case or copendency of this application with another application at any time to Deposit Account No. 05-1712.

Respectfully submitted,

May 18, 2010
Date

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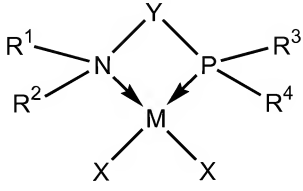
V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 2

The present invention as claimed is directed to a catalyst compound useful in olefin oligomerization and or polymerization represented by the formula:



wherein

M is iron, cobalt, or nickel; N is nitrogen; P is phosphorus; R^1, R^2, R^3, and R^4 are hydrocarbyl radicals; Y is a hydrocarbyl bridge comprising a backbone wherein the backbone comprises a chain that is four or more carbon atoms long and is selected from the group consisting of butylene, pentylene, hexylene, heptylene, octylene, nonylene, decylene, undecylene, dodecylene, tridecylene, tetradecylene, pentadecylene, hexadecylene, heptadecylene, octadecylene, nonadecylene, eicosylene, heneicosylene, docosylene, tricosylene, tetracosylene, pentacosylene, hexacosylene, heptacosylene, octacosylene, nonacosylene, triacontylene, cyclohexylene, cyclooctylene, cyclodecylene, cyclododecylene, biphenyl, butenylene, penentylene, hexenylene, heptenylene, octenylene, nonenylene, decenylene, undecenylene, dodecenylene, hexynylene, heptynylene, octynylene, nonynylene, decynylene, undecynylene, dodecynylene, butadienylene, pentadienylene, hexadienylene, heptadienylene, octadienylene, nonadienylene, decadienylene, undecadienylene, dodecadienylene, hexatrienylene, octatrienylene, decatrienylene, and dodecatrienylene radicals; and

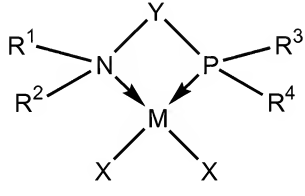
(f) each X is independently methyl, ethyl, propyl, butyl, pentyl, hexyl, heptyl, octyl, nonyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentadecyl, hexadecyl, heptadecyl, octadecyl, nonadecyl, eicosyl, heneicosyl, docosyl, tricosyl, tetracosyl, pentacosyl, hexacosyl, heptacosyl, octacosyl, nonacosyl, triacontyl, hydride, phenyl, benzyl, phenethyl, tolyl, methoxy, ethoxy, propoxy, butoxy, dimethylamino, diethylamino, methylethylamino,

phenoxy, benzoxy, allyl, 1,1-dimethyl allyl, 2-carboxymethyl allyl, 1,1,1,5,5,5-hexa-fluoroacetylacetonate, 1,1,1-trifluoro-acetylacetonate, and 1,1,1-trifluoro-5,5-di-methylacetylacetonate; or the two X's are connected to form catecholate, 3,5-dibutylcatecholate, 3,6-dibutylcatecholate, 3,6-dibutyl-4,5-dimethoxycatecholate, 3,6-dibutyl-4,5-dichlorocatecholate, 3,6-dibutyl-4,5-dibromocatecholate, 1,3-propylene, chloride, bromide, iodide, or 1,4-butylene.

The description of Applicant's catalyst compound is found at pages 6 to 14, and the originally filed claims, particularly originally filed claims 2-15 of the specification as filed.

Independent claim 16

The present invention as claimed is also directed to a catalyst compound useful in olefin oligomerization and or polymerization represented by the formula:



wherein

M is nickel, cobalt or iron,

N is nitrogen;

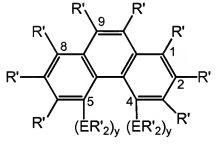
P is phosphorus;

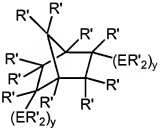
R^1, R^2, R^3, and R^4 are hydrocarbyl radicals;

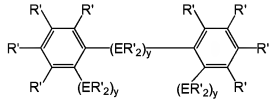
each X is independently methyl, ethyl, propyl, butyl, pentyl, hexyl, heptyl, octyl, nonyl, decyl, undecyl, dodecyl, tridecyl, tetradecyl, pentadecyl, hexadecyl, heptadecyl, octadecyl, nonadecyl, eicosyl, heneicosyl, docosyl, tricosyl, tetracosyl, pentacosyl, hexacosyl, heptacosyl, octacosyl, nonacosyl, triacontyl,

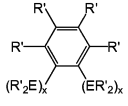
hydride, phenyl, benzyl, phenethyl, tolyl, methoxy, ethoxy, propoxy, butoxy, dimethylamino, diethylamino, methylethylamino, phenoxy, benzoxy, allyl, 1,1-dimethyl allyl, 2-carboxymethyl allyl, 1,1,1,5,5,5-hexa-fluoroacetylacetonate, 1,1,1-trifluoro-acetylacetonate, and 1,1,1-trifluoro-5,5-di-methylacetylacetonate, or the two X's are connected to form catecholate, 3,5-dibutylcatecholate, 3,6-dibutylcatecholate, 3,6-dibutyl-4,5-dimethoxycatecholate, 3,6-dibutyl-4,5-dichlorocatecholate, 3,6-dibutyl-4,5-dibromocatecholate, 1,3-propylene, chloride, bromide, iodide, or 1,4-butylene; and

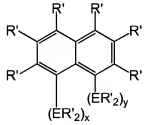
Y has one of the following formulas:

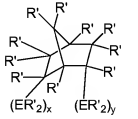


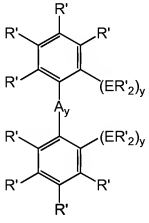


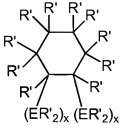


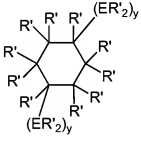


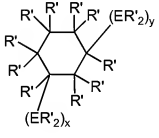


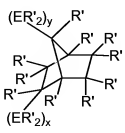
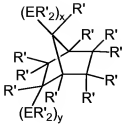
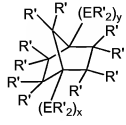
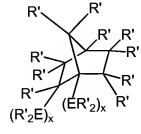
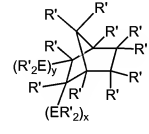
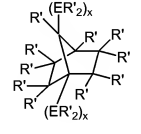
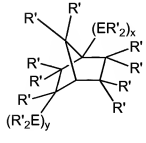
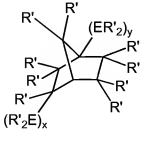










where

R' are hydrogen or C_1-C_{50} hydrocarbyl radicals;

A is a non-hydrocarbon atom functional group;

E is a Group-14 element;

x is an integer from 1 to 4; and

y is an integer from 0 to 4.

The description of Applicant's catalyst compound is found at pages 6 to 14, and the originally filed claims, particularly originally filed claims 2-17 of the specification as filed.

Please note that the main difference between claim 2 and claim 16 is the definition of element "Y".